IN THE CLAIMS

Claim 1 (currently amended): A method for measuring the phosphorylation state ~~presence or absence of phosphate groups attached to~~ of biological molecules in a sample, comprising tagging said ~~whereby these~~ molecules ~~are tagged~~ with fluorescent markers and activating said [[these]] fluorescent markers ~~are activated~~ by ~~means of~~ irradiating the sample with light, the method further comprising the steps of: ~~wherein the method encompasses the following steps~~:

(a) selecting ~~Use of~~ a fluorescent marker, whose ~~the~~ fluorescence lifetime ~~of which~~ assumes a different value depending upon the presence or absence of phosphate groups in its vicinity ~~attached to the biomolecule~~;

(b) attaching the fluorescent marker selected in step (a) to a biomolecule;

(c) [[(b)]] measuring ~~Measuement of~~ the fluorescence lifetime of the fluorescent marker in a sample containing the ~~attached to a~~ biomolecule with the fluorescent marker attached ~~and selected~~ in accordance with step ~~a)~~ (b); and

(d) classifying ~~Classification of~~ the biomolecules in the sample in accordance with the presence or absence of phosphate groups attached to [[these,]] said biomolecules, while basing said classifying on the different [[15]] lifetime of each fluorescence marker.

Claim 2 (currently amended): The method of Claim 1, wherein the biological molecules are selected from a group which comprises an amino acid sequence~~, such as proteins, peptides, glycoproteins and lipoproteins~~.

Claim 3 (original): The method of Claim 1, wherein the fluorescent marker is

selected from the group which comprises fluorescein and fluorescein derivatives.

Claim 4 (original): The method of Claim 1, wherein the biological molecules of a sample are incubated with a phosphatase or with a phosphokinase prior to the measurement of the state of phosphorylation.

Claim 5 (currently amended): The method of Claim 1, wherein one or more steps selected [[form]] from the group of marking of biological molecules, activation of the assay, and measurement of the fluorescence lifetime is conducted in a multiwell plate~~, such as a microplate with 96, 384 or 1536 wells and~~ with a computer for automatically classifying the biomolecules or the samples respectively.

Claim 6 (original): The method of Claim 1, wherein the measurement of the fluorescence lifetime is undertaken by means of time correlated single photon counting (TCSPC) or by means of the phase modulation technique.

Claim 7 (original): The method of Claim 1, wherein the proportion of the two species of biomolecules in the assay is quantified by means of calibration.

Claim 8 (currently amended): ~~Use of the~~ The method in accordance with Claim 1 for drug discovery screening of chemical agents for pharmacologically effective substances.

Claim 9 (currently amended): ~~Use of the~~ The method in accordance with Claim 1 for

drug discovery screening of chemical agents for manufacturing pharmacological preparations.

Claim 10 (currently amended): ~~Use of the~~ The method in accordance with Claim 1 for detecting defects in human or animal enzymes.

Claims 11-12 (canceled).

Claim 13 (new): The method of Claim 1, wherein the biological molecules are selected from a group which comprises an amino acid sequence selected from the group comprising: proteins, peptides, glycoproteins and lipoproteins.

Claim 14 (new): The method of Claim 1, wherein one or more steps selected from the group of marking of biological molecules, activation of the assay, and measurement of the fluorescence lifetime is conducted in a multiwell plate comprising a microplate with 96, 384 or 1536 wells and with a computer for automatically classifying the biomolecules or the samples respectively.